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Common Grounds, Common Waters: Towards a Water Ethic - Roundtable Discussion

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Roundtable Discussion

Professor Gabriel Eckstein and Dr. Irene Klaver,
Moderators

PROFESSOR GABRIEL ECKSTEIN*

The purpose of this roundtable discussion is to continue the dialogue but in a more informal setting, and to allow people to develop some of the ideas and concepts that they started earlier but could not finish because of the time limits.

It is also to get the audience and the panelists to ask questions of each other and to participate in more of a dialogue. To start this discussion I want to raise, at least to the panelists, this issue of wants versus needs, and I am actually going to add one more—versus rights—because I thought that was very interesting and because the human rights concept, within needs, has an even more fundamental level that is not just needs. It is an absolute right. Beyond that you have a larger picture of needs and then beyond that you have wants.

- * Gabriel Eckstein and Irene Klaver served as Symposium Chairs in planning and coordinating this symposium. They served as moderators of this roundtable discussion, which included all of the day's panelists. Gabriel Eckstein is the George W. McCleskey Professor of Water Law at Texas Tech University and specializes in U.S. and international water law and policy. He directs the Texas Tech Center for Water Law & Policy and, separately, he directs the internet-based International Water Law Project (<http://www.InternationalWaterLaw.org>). In addition to lecturing in law and science fora around the world, he has also served as an expert advisor and consultant on U.S. and international environmental and water issues to various organizations, including the United Nations, World Commission on Dams, Organization of American States, U.S. Agency for International Development, and local water conservation districts in Texas. Professor Eckstein currently advises the U.N. Educational, Scientific, and Cultural Organization and Ambassador Chusei Yamada of the U.N. International Law Commission on the development of an international convention on transboundary groundwater resources. Prior to joining Texas Tech, Professor Eckstein served as Senior Counsel for CropLife America, a U.S. trade association of agricultural chemicals and biotech companies and as a litigator in private practice working on environmental, toxic tort, and asbestos cases. Professor Eckstein holds an LL.M. in International Environmental Law and a Juris Doctor from American University, a Master of Science in International Affairs from Florida State, and a Bachelor of Arts in Geology from Kent State University. He is admitted to the bars of New York, West Virginia, and the District of Columbia.

I also wonder how that plays into the concept of water ethics and how do we address rights versus needs versus wants in terms of everything from business and the market system to the social system, and the decision-making process.

I open this to the panelists.

MR. HARRY OTT*

I think that tossing in the idea of water as a right would work. You would be able to stimulate some conversation. But one of the things that we [Coca Cola] have come to understand as a company is that we need to understand the communities we are going into. By this I mean into places like India. In places in India, like Varanasi, the Holy City, they have spiritual rights to water in certain parts of the area.

So I would toss in the fact that when any of us is going into one of these places, one of the first things I have learned from my experience is to understand the culture or at least try to understand the culture as best you can before you start making decisions about wants, needs, and rights because that may definitely relate back to needs and rights.

- * Harry Ott holds a Bachelor of Technical Science in Environmental Engineering from Texas State Technical College and has completed several policy development and environmental law courses toward a master's degree at the University of Denver. Mr. Ott spent several years in research and operation of water and wastewater treatment facilities for Los Angeles County and the city of Ft. Worth, Texas. During the next sixteen years he supervised the operation of utilities for Schlitz Brewing Company and the Coors Brewing Company. In 1990, Harry joined Coca-Cola Foods in Houston, Texas, as a Senior Environmental Administrator responsible for managing environmental, health, and safety programs at various division facilities. In 2004, he was appointed Director, Global Water Resources Center with responsibility for worldwide water stewardship within the Coca-Cola system, and in 2006, he moved into a new position as Director, Strategic Global Water Initiatives focusing on India and China, and supply chain issues related to the Company's water stewardship programs and initiatives. In these various roles over the past seventeen years he has worked on international projects and initiatives in more than 130 countries. Recently, he served as chairman for the Global Environmental Management Initiative (GEMI). At the request of the Administrator of the EPA he served on a National Water Infrastructure panel in Washington, D.C. In 2002, he received an appointment to the Strategic Advisory Board of the Bureau of Environmental, Health, and Safety Auditor Certifications (BEAC), a registered non-profit organization based in North America. Mr. Ott presented during the panel at this symposium titled *Water Ethics and Commodification of Freshwater Resources*. See *supra* pp. 24 – 29.

DR. LARRY SWATUK*

I would resist adding rights because wants and needs are, more or less, a negotiated preference. I would rather put rights with responsibilities because it is relational. I might need something, and I might feel it is a need, and you might agree it is a need, but what are my rights to that thing and how do I uphold that right? There must be a responsibility among other actors to uphold or recognize my rights. So I do not think wants and needs and rights is a good way to categorize it.

MR. RICHARD PAISLEY*

I think we should include rights because it is a classic in negotiations-speak, but we should be talking more about interests. I will give you an example. One of the two reasons the Nile treaty has not been signed is that Ethiopia absolutely refuses to comply with customary international law and agree to anything that would

* Dr. Larry Swatuk has spent most of the last fourteen years living in Africa. For most of 1994 he was a Visiting Research Fellow at Rhodes University in South Africa where he began researching the politics of environmental change and natural resource management with an emphasis on the cooperative potential of such activities. In 1995-96, Dr Swatuk was Senior Research Fellow at the African Centre for Development and Security Studies in Ijebu-Ode, Nigeria. From 1996-2007, he was employed at the University of Botswana first as a Lecturer in the Department of Political and Administrative Studies and second as Associate Professor of Natural Resource Governance at the Harry Oppenheimer Okavango Research Centre. During 2001 he was a Ford Foundation Senior Fellow at the University of the Western Cape, South Africa. Presently, he is on sabbatical in Halifax, Canada, where he is Adjunct Professor of International Development Studies and Research Fellow, Centre for Foreign Policy Studies, Dalhousie University, and a sessional lecturer in the Departments of Political Science and International Development Studies at St Mary's University. Dr. Swatuk has published extensively on water resources issues in Southern Africa. Dr. Swatuk presented during the panel at this symposium titled *Water Ethics and Commodification of Water Resources*. See *supra* pp. 15-19.

* Richard Kyle Paisley is a practicing lawyer and the Director of the GEF Global Transboundary International Waters Initiative at the Institute of Asian Research at the University of British Columbia in Vancouver, Canada. Mr. Paisley's academic background includes graduate degrees from the London School of Economics in London, England, the University of Washington in Seattle, Washington, and Pepperdine University School of Law in Malibu, California. His current research, teaching, and legal practice interests are largely in the areas of international water and energy law, negotiations, and environmental conflict resolution. Mr. Paisley has directed a wide range of conferences, workshops, and research projects. He has published extensively and been an advisor and trainer on these subjects to numerous international agencies, governments, non-governmental organizations, and aboriginal groups including the United Nations Food and Agricultural Organization (FAO), Nile Basin Organization, Mekong River Commission Secretariat, United Nations Development Program, International Union for Conservation of Nature, and World Bank. Mr. Paisley presented during the panel at this symposium titled *Water Ethics in a Globalized World*. See *supra* pp. 66 – 74.

require Ethiopians to notify Egyptians when Ethiopians plan to do a project in Ethiopia. It is the doctrine of prior notification.

The reason the Ethiopians will not notify the Egyptians has nothing to do with the law at all, although they couched it in legal terms. The reason is that they have a strong interest, and respect is the real interest because as far as the Ethiopians can tell, the Egyptians have been jerking them around for 3,000 years and taking slaves from Ethiopia.

So if you try to resolve that situation on the basis of rights or needs or law or any of that, you get nowhere. I am not saying you can resolve it on the basis of interests either, but at least if you drill down and start talking about interests you realize what the real issue is, which is one of respect. It has nothing to do with the law, and it has nothing to do with rights. It has nothing to do with anything else. So I think it is important to talk, using that as example, about interests.

PROFESSOR JAMES HUFFMAN*

It is also important that our ethical principles have to be based on some notion of obligations and dues. If we reduce everything to interests we have no interests in protecting natural resources, and we really have no interest in protecting the future.

But because people who came before us felt they had duties to future generations, we live less in a society in which we are blessed with certain opportunities that would not have come about if people had not taken a position that there were responsibilities and duties to the future and to protect these sources. I think we have to somehow factor duties and responsibilities if we are going to have ethics of water.

* Professor Huffman has been on the faculty at Lewis & Clark Law School since 1973 and served as dean from 1993 to 2006. He has been a visiting professor at the University of Oregon, Athens University (Greece), Auckland University (New Zealand), and Universidad Francisco Marroquin (Guatemala). Professor Huffman has taught water law, natural resources law, jurisprudence, constitutional law, and torts and has written extensively on water and other natural resource and environmental issues. His forthcoming publications include a history of the public trust doctrine in *Duke Environmental Law and Policy Forum*, an analysis of the Lucas background principles concept in *Ecology Law Quarterly*, and a critical appraisal of the role of nuisance law in ecosystem services protection in *Case Western Reserve Law Review*. He is also completing a book on property rights and government regulation and is contributing to a paper on the federal role in water resources management to the NYU/New York Law School. He is a graduate of Montana State University, the Fletcher School of Law and Diplomacy, and the University of Chicago Law School. Professor Huffman presented during the panel at this symposium titled *Water Ethics and Commodification of Freshwater Resources*. See *supra* pp. 20-24.

MS. DINARA ZIGANSHINA*

I completely agree that we have to include both rights and obligations, and when I examined the General Comments, I found out that there is no responsibility on water users at all.¹ They talk about duty of government, some kind of private sector, NGOs, and the international community but nothing about water users.² Exactly what has made this responsibility of end water users for water conservation and effective use of water? It should be a combination of rights and obligations. I completely agree.

PROFESSOR JEAN FRIED*

This can be obtained only with a combination of legally binding texts, incentives, and education. You have to have these three components to achieve something completely.

PROFESSOR GABRIEL ECKSTEIN

You do not think that you can have an ethics-based responsibility?

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1. U.N. Econ. & Soc. Council [ECOSOC], Commission on Economic, Social and Cultural Rights, *Substantive Issues Arising in the Implementation of the International Covenant on Economic, Social, and Cultural Rights: General Comment No. 15*, U.N. Doc. E/C.12/2002/11 (Jan. 20, 2003), available at [http://www.unhchr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/\\$FILE/G0340229.pdf](http://www.unhchr.ch/tbs/doc.nsf/0/a5458d1d1bbd713fc1256cc400389e94/$FILE/G0340229.pdf) (last visited Nov. 16, 2007).

2. *Id.* at §§III – VI.

* Professor Fried is a Senior Consultant at UNESCO where he directs the Transboundary Groundwater Education project and belongs to the Advisory and Peer Review Group of the International Hydrological Programme (IHP) Phase VII 2008-2013. He is currently a Project Scientist at the Planning, Policy and Design Department of the School of Social Ecology at the University of California, Irvine. Professor Fried also recently was appointed as Cooperating Scholar of the School of Policy and International Affairs at the University of Maine. Professor Fried has developed an expertise in water sustainable management and the interaction between science, legislation, and policy-making through his work as Expert-Consultant and Science Advisor to policy-makers and legislators on water and sustainable development at the European Commission from 1976 through 1996 and as Tenured Professor of Fluid Mechanics at the Universite Louis Pasteur in Strasbourg, France, until 2006. Professor Fried also gave the keynote address at the symposium *Common Grounds, Common Waters: Towards a Water Ethic*, held at Santa Clara University on March 14, 2008. See *supra* pp. 1-14.

PROFESSOR JEAN FRIED

I do not think it is enough. My experience with the Water Directives³ and the European Union experience is that we would have been very happy not to have any law, for instance, on throwing dangerous substances into the water. We would have liked to say that since it is dangerous, please do not throw your dangerous substances into the river. No, you have to have the text that says if you do that, you will go to court, and if you go to court, you have to pay heavy fines.

But a combination and also education stimulating the people to understand better that they are working also for the future generation. Not only for themselves but also for their children, grandchildren etc. The prise de conscience as you say in French. Really at the same time but also combined with incentives.

DR. HELEN INGRAM*

One of the problems with the word incentive is that it sounds as if we all need to be bribed to do what we ought to do. So I like the word motivation, if you don't mind, because I think motivation relates to the whole variety of ways in which people can be convinced to do things.

And Jean Fried talks about education. Well you cannot be motivated to do something you have never even thought about and have no idea of. So of course you have to have education.

You also have to have capacity. If you do not have the wherewithal to do something, no matter how much you would like to, you cannot do it. So capacity building is part of that.

3. Council Directive 2000/60/EC, *pmbl.*, 2000 O.J. (L327) 1 (EC).

* Dr. Helen Ingram is a Research Fellow at the Southwest Center at the University of Arizona. She is a professor emeritus at the University of California, Irvine and the University of Arizona. Until 2006, she was the Warmington Endowed Chair of Social Ecology at the University of California, Irvine. She chaired an National Research Council panel for the Committee on the Human Dimensions of Climate Change in the Division of Behavioral and Social Sciences that completed its work in 2008 and issued a report entitled *Research and Networks for Decision Support in the NOAA Sectoral Applications Research Program*. Dr. Ingram also chairs the writing committee for the Climate Change Science Program 5.3 Product. She is also on the Advisory Committee of the Rosenberg Forum on International Water Policy. Dr. Ingram holds a B.A. in government from Oberlin College and a Ph.D. in public law and government from Columbia University. Her published works include thirteen authored, coauthored, and edited books and over a hundred articles and book chapters on public policy, policy design, water policy, environmental policy, and the politics of water in the Southwestern United States and the U.S.-Mexico transboundary area. Dr. Ingram presented during the panel at this symposium titled *Water Ethics in a Globalized World*. See *supra* pp. 57-61.

You have also got to believe in commitment. For example, I do not believe in war. I do not believe there is a just war, and you would not get me to send my son or my daughter to war under any circumstances, and that has to do with my deep personal beliefs. There is not much that can be done other than through force to change. You could not buy that. Some things you can buy, for example are regulations, which are threats, or incentives that tend to be monetary.

PROFESSOR JAMES HUFFMAN

Just a couple thoughts on the earlier question about ethics and rights. The way we think about them is dependent on what cultural or legal system we are in. If you are in the Anglo American legal tradition the idea of rights is what legal philosophers describe as negative rights as opposed to positive rights. And what we have been talking about here mostly are positive rights. That is, rights to things rather than rights to be protected from the things that the government might do.

And that explains why the United States government has not signed off on the Universal Declaration of Human Rights,⁴ for example. It is a sound distinction. Again, it depends upon who you are talking to. When you are talking about the right to water, in the Anglo American tradition you would say it is not a right we can really guarantee because we do not know for certain that we have the resources to deliver the water. We can say for certain, although we will never actually live up to it, that the government cannot interfere with free speech or something else.

That is an important distinction. The other distinction that I think is also a good Anglo American legal debate is between morality and law and whether or not a law is a valid law if it is not moral or ethical. It is a debate between the natural law people and the positivists, and I think some people would say you could live in two worlds. You can have this legal world in which you obey the law, whether or not it is moral, or you choose not to obey it because it is not moral, but you still have to bear the legal consequences in an ethical world in which you behave a certain way because it is the right thing to do.

In that sense I agree with Helen [Ingram] that paying people to do the ethical thing does not quite seem right. But at the same time, incentives do matter which is why I have to think like an economist because that is what drives a whole lot of human behavior and not ethics.

4. Universal Declaration of Human Rights, G.A. Res. 217A, U.N. GAOR, 3d Sess., 1st plen. mtg., U.N. Doc A/810 (Dec. 12, 1948).

DR. DAVID FELDMAN*

I think it is true that incentives do matter, but I think another point that should be added to the distinction is that of positive and negative rights, which is something that Dr. Martin Luther King reminded us of and which I think is very relevant to this discussion. Oftentimes positive rights have to be expressed by violating law and basing it on a higher moral principle if you are willing to accept the consequences of your actions.

One of the things that we have seen in many of the cases that have been presented today, and elsewhere, is that there may be ways of conscientiously objecting to injustices that can allow for a peaceable and amicable dialogue that will achieve principles of justice if you are willing to truly live up to a code that is higher than conventional law. That does not mean committing acts of violence. It does mean being willing to accept the consequences of the sanctions of society. It also means living up to commitments pertaining to principles of conscience and that may be an important ingredient for achieving change in water and in environmental principles.

* Dr. David Feldman is Professor and Chair of the Department of Planning, Policy and Design at the University of California, Irvine. His previous positions include the Department of Political Science and the Energy, Environment and Resources Center at the University of Tennessee, and Oak Ridge National Laboratory. His research focuses on water resources management, global climate change, natural resource disputes, and environmental ethics. His most recent book, published by Johns Hopkins University Press in 2007 is *Water Policy for Sustainable Development*. He is also the author of *Water Resources Management: In Search of an Environmental Ethic* (Johns Hopkins, 1995) and three other books, as well as more than 60 articles. Dr. Feldman is the 2001 recipient of the Policy Studies Organization Interdisciplinary Scholar Award and served as editor of *The Review of Policy Research* and symposium coordinator of *Policy Studies Journal*. His current research explores the relationship between the growth of a democratic civil society and environmental reform in Russia. Dr. Feldman holds a PhD in political science from the University of Missouri, and a B.A. in political science and English from Kent State University.

MR. PAUL KIBEL*

You posed a very interesting question in terms of laying out the relationship between needs, wants, and rights. Another possible way to think about it is as an evolutionary process. We have articulations of needs and wants that are preferences and perhaps ethical statements.

When we reach a point where there is enough of a consensus and enough of a governance infrastructure in place that those preferences become enforceable, functionally enforceable, in a positivist sense, they then become rights.

Part of what we have been sort of thrashing through today is talking about ethical principles, economic argument, policy preferences and trying to understand why it is that, despite the fact that there seems to be some good grounds for those preferences and those ethical positions, it does not seem to be translating into rights, whether they are positive or negative, that are currently enforceable. Perhaps that is just a process that happens as a consensus is built.

DR. HELEN INGRAM

You know someone said rights were something we ought to avoid because they had the business of trumping everything else. One of the things about consensus-building is that it allows for discussion, and when you have a right, you do not get to discuss that right. It is an absolute kind of a right.

A right does not mean anything unless it is in some sense enforceable. I can understand why, if you really believe that a process of discursive democracy will produce a better result, people asserting certain sorts of rights interrupt the discussion. On the other hand, you have something like human access to water

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where some people have a lot of water while other people positively do not have enough water to live on.

It is perhaps a good idea to assert a right at least from the perspective that there has to be some limit here to what we are willing to allow people to suffer without saying this is a human right.

MR. PAUL KIBEL

Maybe we are using rights in two ways. We are using rights in the ethical sense in that it is proper, it is appropriate, and then we are using it in a more legalistic sense to say that if this is something that someone does or does not do, then we can ultimately enforce it.

I think of the United States, maybe during the 1950s and 1960s and early 1970s, there was discussion about species decline and biodiversity loss. Eventually the science and the public debate led to things like the Endangered Species Act that provided an actual articulation of procedures and recourse to deal with it,⁵ which came out of discussions like this.

DR. IRENE KLAVER*

Yes, I think this is going to the next level of our discussion. If you think about the things we just talked about—our rights, call them interests, call it respect—

5. Pub. L. 93-205, 87 Stat. 884, 16 U.S.C. § 1531 – 1534, *available at* <http://www4.law.cornell.edu/uscode/16/1531.html> and <http://www.fws.gov/r9endspp/esa.html>.

* Gabriel Eckstein and Irene Klaver served as Symposium Chairs in planning and coordinating this symposium. Dr. Irene Klaver is Director of the Philosophy of Water Project and Associate Professor of Philosophy at the University of North Texas. She has published widely in the field of Environmental Philosophy and given numerous talks and courses on water issues. Her research and teaching focuses on social-political and cultural dimensions of water. She is member of the newly formed UNESCO-IHP Expert Advisory Group on Water and Cultural Diversity (IHP is the International Hydrological Program, UNESCO's Division of Water Sciences). At the University of North Texas she organizes biennial water conferences, called, *WaterWays—Confluence of Art, Science, Policy and Philosophy*. These are public interdisciplinary platforms for scientists, politicians, philosophers, artists, managers, and specialists from both the public and private sector, to explore water issues across boundaries. Dr. Klaver developed the "River Cultures ~ Ecological Futures" initiative with Dr. Natarajan Ishwaran, Secretary of UNESCO's Man and Biosphere Program and Director of Division of Ecological and Earth Sciences. The initiative focuses on social-cultural dimensions of Integrated Water Resource Management specifically along river basins. It inspired the "Global Rivers Project," an international documentary film project examining the environmental, political, and cultural impacts on five major world rivers - the Amazon, Danube, Ganges, Rio Grande, and Mississippi. A compilation of the river documentaries will premiere November 2008 in Beijing and feature in IMAX theaters.

ultimately you have to keep in mind the goal of this discussion about all these tools. And that, ultimately, is an overriding, overarching ethical principle of how to reach an equitable and sustainable water management. The ultimate intent of our meeting is how to get there.

So let's continue with the difficult issue that came out earlier. We can have all these beautiful senses of rights or needs or all these contractual agreements, but so what? How do we get them to work? How do we get them implemented? I want to come back to a very important moment today. We all received a gift from one of us who probably has the least funding of anyone here. We got a gift from Vernon [Masayesva].⁶ And this gift is a very symbolic gift. It is very symbolic because it is a token of intertwinement, and, therefore, it is the message that is actually the other gift that Vernon gave us. Namely the message of the importance of intertwinement.

So first, what is very important is the intertwinement of all these concepts of rights, duties, incentives, motivations etc. Second is how can we create, how can we facilitate a society, or a mentality that affords the implementation of this kind of overarching ethics of equitable and sustainable water management?

Jean [Fried] gave one possible venue, with the example of the river basin-based management in France, which is a management that overrides the traditional, jurisdictional, political structure.⁷

And actually John Wesley Powell in the 19th century proposed the same thing.⁸ Some of us might remember that he came up with the suggestion that we should actually restructure our state in terms of river basins. We should let the governor of the Rio Grande ask: can we do this kind of management or not?

We are on our way in that possible direction. This is one possible way that we can reach a final mentality shift that takes equitable and sustainable water management seriously and that actually intertwines education and money issues.

Again, the intertwining is the crucial component in this, and I would like us to brainstorm about how we can intertwine an approach that leads to an overarching water ethic. Jean [Fried] gave us one possibility and we might be able to come up with other possibilities.

6. See *supra* presentation of Mr. Vernon Masayesva pp. 29-32.

7. See *supra* keynote address of Professor Jean Fried pp. 1-14.

8. MARC REISNER, *CADILLAC DESERT: THE AMERICAN WEST AND ITS DISAPPEARING WATER* 47 (Penguin rev. ed. 1993).

MR. VERNON MASAYESVA*

I have a simple answer. We need to add another commandment—thou shall use water twice.

DR. IRENE KLAVER

Well the strength of Vernon [Masayesva]'s gift, of this intertwinement, is that intertwinement does not mean that you lose the identity. You have a white thread and a black thread. Together they make the strength. The question is how can we think about various ingredients that are necessary to come to an equitable and sustainable water management?

MR. VERNON MASAYESVA

I think water is really the medium through which humanity can bond. Because if anything is common to all of us, it is water. All of us are water. Water has that bonding power. Water in your body connects all parts of your body together. So you are a water-born, water vessel, and you are, in a spiritual sense, water. By the same token lands are bonded together, not separated, by water. What we need to start doing is looking at things differently. People say lands are separated by water; in Hopi, lands are connected through water. In reality, people all over the world are connected through water.

By the same token, the earth is connected to other planets through water. Water is something we all understand. We all understand how critical it is. It can save and destroy depending on how you use it because water has memory. It responds

* Vernon Masayesva is a member of the Coyote Clan of the Hopi Tribe in Northern Arizona. He is from the village of Hotevilla on Third Mesa, one of the fingers of Black Mesa. Mr. Masayesva, who is fluent in Hopi and English, received a B.A. at Arizona State University in Political Science and a Masters of Arts from Central Michigan in 1970. He returned to Black Mesa and served as Principal of the Hotevilla-Bacavi Day School, the first Indian-controlled school on Hopi. In 1984, he was elected to the Tribal Council and then served as Tribal Chairman from 1989 through 1993. From 1995 to early 2001, he was director of the Arizona Native Scholastic and Enrichment Resources Program, a joint effort with the University of Arizona's American Indian Studies Program and several private schools in the state to provide talented Native American students with educations at independent college-preparatory schools. Mr. Masayesva has been involved in the tangled intricacies of coal and water mining on Black Mesa for decades. Today, as Director of Black Mesa Trust, he has successfully helped to stop the use of pristine N-aquifer water, the sole source of drinking water for the Hopi people, to slurry coal from Black Mesa Mine to the Mohave Generating Station in Laughlin, Nevada. Former President Clinton identified Mr. Masayesva as a "quiet environmental hero." Mr. Masayesva presented during the panel at this symposium titled *Water Ethics and Commodification of Freshwater Resources*. See *supra* pp. 29 – 32.

to human emotions. This science is now emerging. We are now reaching a point where we might begin to intertwine indigenous knowledge with what scientists are now theorizing.

We have not even talked about the beauty of water, the aesthetics of water. We are trying to understand what water is, but we have a real problem. We have a language problem. What we have here is failure to communicate. Scientists explain their theories, but they have a hard time explaining what they are doing in a language I understand. We have a hard time understanding string theory because according to the scientists who are modeling it, there are over ten dimensions. My mind cannot comprehend that. I have no language to explain the latest development in this area. Language is a huge barrier.

You have lawyers using their own language. Rights control their mindsets. That is their work. Rights have to be protected. They never say water. They say water rights, but no one ever says water is, not a right, but a privilege. That is a big problem.

We do not control water. But look at how many seminars there are throughout the country that talk about water management. I went to one in 1992, and it was about managing and distributing water. No one talks about the spirituality of the water.

Managing water means you have the power over water. You control water. We have to switch that thinking. We do not manage water. Water manages itself. There are these little ways of thinking that we need to change, and you can learn a lot from the indigenous people. You can learn a lot from the indigenous, the artists, and the poets. We have a project now where we are trying to put arts and science together. We made a funnel that creates a vortex and we are trying to show that just by moving the water in a certain way the water will cleanse itself. It is beautiful. We are going to exhibit it in San Francisco next month. It will be a huge gathering of scientists and artists.

DR. LARRY SWATUK

Words really do matter and we have been misled through management. Management does not serve us very well here.

Irene asked how do we get to the triple E's of environment, environmental sustainability, and equity? History shows that it is through struggle that we achieve justice. No one is going to give it to you, particularly powerful people who wish to exercise power in their own interest.

It is important that we speak truth to power. But in order to do this effectively, access to power, to powerful people, is key. Vernon [Masayesva] and George Ogendi and others like them are speaking truth today but, where are the people who created Lake Powell in all this discussion and who are going to create similar Lakes Powells to satisfy, first and foremost, their own interests all over east Africa? Those people are not here.

Access to decision-makers is a very important thing and there are forums for that, but we have to have the right venue.

I take great heart in demonstration effects. They matter. In 1989, when the Berlin Wall came down I was in southern Africa, and everywhere I went students were on strike. The universities were closed because students said, "I am sick of these dictators or authoritarian leaders running roughshod over us." A demonstration effect is really important. Where does the galvanizing force come from? The rehabilitation of the Rhine was built around need—crass industrial desire—but also the image of bringing back the salmon.

For ten years in southern Africa I tried to think: can water serve as this galvanizing force in a deeply divided society? I do not see it, but I keep looking for this kind of demonstration effect.

This kind of framework, where we are using different terms and we are sometimes talking past each other, is important because the discursive frameworks are really important. How do we think about these things? We are being offered a completely different way to think about water by Vernon Masayesva, but he is kind of the odd man out here. We all sympathize, but then we say, well, I have got to have a shower, and I need those kinds of things.

So you are back to a sort of primarily high-modern management where Man qua Man believes that he can control nature. Such an approach privileges the "knowledge" of acknowledged "experts" such as engineers and economists. In such a worldview, there is little room for traditional knowledge or other ways of knowing and relating to natural resources. Yet it is this kind of high-modern thinking that has got us into difficulties—depleted aquifers, polluted waters—in the first place.

It is partly for this reason that I do not think the river basin is the conceptual way in. While we may physically inhabit a particular river basin, our economic and ecological footprints are in fact global. While I sympathize with the holistic aspects of basin management, I think it is perhaps more important to find a language that helps us get beyond harnessing water for a hydraulic mission.

DR. DAVID FELDMAN

That is one of the reasons why compacts have not historically worked; because they often just enshrine the rights to those who already have power and authority.

One of the lessons of changing water regimes encompasses three things: one is shame, second is outrage, and third is the need for social movements. I grew up in Cleveland, Ohio, and the Cuyahoga River caught fire when I was in high school. That is about as low as you can get. Any joke that you could possibly tell about the city was told. That shame led to outrage, which led to the Clean Water Act,⁹ which led to the creation of the National Environmental Policy Act¹⁰ and lots of other changes.

Mono Lake here in California has not been totally recreated, but it has been brought back in part because of outrage that led to social movements around the state. Sometimes the answer is that there have to be structures that permit that outrage to be expressed in a positive set of forums.

From the local standpoint, what that suggests is that if you want to fight against environmental degradation, you must fight against poverty and fight for democracy. If those things can be brought about, social movements could emerge and maybe lead to change.

PROFESSOR JAMES HUFFMAN

I guess I am basically a Hobbsian. The people who built Lake Powell forty or fifty years ago were us. They were sitting right here. That is democracy at work. It is just that values have changed and now we would not build Lake Powell, but we would do other things, and amongst us, we would not agree about what we would do. I am also a Madisonian, and Madison says we have factions and so we have to build a government so that these factions cannot run over one another.

There is no escaping it. I am enthralled with the idea that we could somehow rise above it, but thousands of years of human history tell me we will not, so we better build institutions that allow us to cope with who we really are.

There are some better people, and Vernon [Masayesva] I am sure is one of them. But not everybody is going to do what he did and give us a gift. The vast majority of people are looking after themselves, and it is always going to be that way.

9. Clean Water Act of 1977, 33 U.S.C. §§ 1251-1387 (2002).

10. National Environmental Policy Act of 1969, 42 U.S.C. §§ 4321-4347 (2000).

DR. HELEN INGRAM

You know the trouble with the institutional design is it is not the answer either. I have looked at a lot of these rules for institutional design. A lot of them relate to river basins. Ten years ago CALFED was the best thing going; the great hope.¹¹ It is not today, despite having a lot of money, a lot of good science, and a river basin footprint. It had a lot of money dedicated to environmental restoration; it had a great many things going for it.

So it is not simply institutional design. You also have to harness this will that David [Feldman] talked about. What happened to CALFED was a failure of will. The farmers finally decided we do not really have to play with these environmentalists; we might do just as well on our own. And the environmentalists said, "we are wasting a lot of energy here; we might do better by simply suing the bastards." They might have been right. So the problem with this is that the designs by themselves do not do it. It also takes this covenant.

DR. IRENE KLAVER

So how do we find that will? Because that is again the galvanizing force that they were talking about. In this particular case it is a charismatic species like the salmon.

DR. LARRY SWATUK

An interesting thing about this is that there is a good case in the Okavango where there was all this fear during the serious drought in the mid to late 1990s about the impact of Namibia taking water out of the Okavango. The International Rivers Network helped mobilize people within the basin, especially the lower basin. This was a transnational social movement that put pressure on riparian state governments to preserve the lower Okavango for primary stakeholders there. Did such a social action work? Some believe it did; others say it did not. We do not know what the impact really was of the mobilization in Namibia because it rained. So was the social movement the catalyst, or was it the rain that made the issue go away? What happened after was the social movement itself tried to organize and become institutionalized, to become actually a civil society organization. It has pattered along, but in my view, it really has not gone anywhere.

They have something called the Okavango Basin Wide Forum. But, in my view, if it did not get \$5 million a year from Sweden it would not even exist. The

11. Information about the CALFED program is available at http://calwater.ca.gov/calfed/about/about_calfed.html.

very nature of social movements is that they arise in response to something very specific and then something good might happen, but maybe not. In general, the issue dies down, goes away, or it is resolved.

Typically, we go our own way and we do not build on it. So, a key question for me is how do we learn and build on this experience so that we do not have to relearn how to make the wheel in every country each time a similar issue arises.

DR. HELEN INGRAM

The Rio Grande Consortium has been a long standing, institutionalized way of collaborating. Is there any carry over from one time to another? How does it sustain itself?

DR. DAVID FELDMAN

Comparatively, it is not a long-standing institution, but it certainly has enjoyed a long period of credibility in our short time frame. It is credible because it is based on coming together. This may be the problem with CALFED too. CALFED started out with the idea that we could all better come together. All of these interests could get together better rather than starting out with a sense of what is our common problem, or what is the bio-physical reality that we all face?

Everybody contributed to that and thought about that problem before the interests got a hold of their own parochial concerns. It has to do with the common idea of these ways of knowing, of beginning to converge through dialogue and deliberation, and a good dose of scientific input. But, of course, scientists have learned to talk in a language that regular people understand, and where regular people have traditional environmental knowledge that is also seen as valid.

Everybody begins to share a common sense of the nature of the problem and the problem is one they all face. It is a common denominator that binds us together, rather than our interests starting it up.

Maybe that is why this Rio Grande Commission has prospered over a long period of time. That is not to say that it does not have problems.

PROFESSOR GABRIEL ECKSTEIN

I want to touch on something that David [Feldman] said. I am not disagreeing with you, but it bothers me when we say that we need change and that sort of activism to act on a situation because it means that we are a reactionary society. We do not pro-act in advance, which then suggests that we have no ethical basis to act upon something proactively. I find that very troubling.

PANELIST

Do you mean the United States?

PROFESSOR GABRIEL ECKSTEIN

People in general. Maybe I am over generalizing; maybe it is just the United States.

DR. DAVID FELDMAN

I think we are proactive, but our political structures . . .

PROFESSOR GABRIEL ECKSTEIN

Is it an institutional issue then?

DR. DAVID FELDMAN

I think it is. The institutions have historically over-represented those who want to exploit the use of natural resources, and then it requires mistakes like the Colorado River or Lake Powell for us hopefully to learn not to do the same thing again. It is unfortunate, but it is the failure of institutions in the United States.

MR. RICHARD PAISLEY

Well, to say the least there seems to be a conspicuous absence of any sort of value-based negotiations of all these things. That is a very good point. It is creeping into places where things seem to work better than others.

When I talk about international basins, I divide them into three categories: the good, the bad, and the ugly. There are a lot of bad and ugly, but there are some pretty good also. We are a value-based negotiation interest; that is important.

Building on the scientific dimension we tend to use science at best in an episodic way. We call in a bunch of scientists; we give a bunch of opinions; we do a bunch of stuff; we forget about them. Yet it seems to be a better plan to use them in what is euphemistically known as an active adaptive management way.

Whatever we do we are probably going to screw it up—my words not theirs—so what you try to do is build a series of experiments to see what works in any particular situation. I see that working in some places. That is what certainly happened in the Columbia River. In places like the Nile, even there they are starting to use science in an active adaptive management way. They recognize that whatever we design we are probably going to screw up so they are going to try a variety of things and see what works. There is a lot to be said for that.

MR. HARRY OTT

I will reiterate something I said this morning, which is that in my experience with water—and in creating some beneficial water initiatives and projects—it has been much more effective working at the grass roots level than it has been at the higher level with organizations, governments, etc.

So, one of the ways that we can bring ethics into this collaboration is by focusing on local issues, but not ignoring the need for collaboration at a higher level as well. Maybe the two can squeeze together to produce something positive in the end.

Another idea that I was thinking about as we were sitting here talking is that maybe some of this water ethic is lost on our generation, and maybe we should focus our efforts on teaching a whole new generation about water ethics—the children, our children, and the younger generation.

If we put water ethics, and the spirituality of water, and some efforts there to teach it to the young people maybe they grow up to be the legislators and the educators and the businessmen and then they will have that ethical basis that a lot of people in today's society do not have.

So I would suggest that is one way we can help create a water ethic, and I am not just talking about people already in college which is obviously very important to the next set of leaders. I am talking about kids in elementary schools. We need to start at that level to teach them something about this area. I mean they all have science courses. Maybe this could be part of the lessons—to bring that ethic along eventually.

PROFESSOR GABRIEL ECKSTEIN

Let me ask one other question and then I'd like to open it up again for the panelists and certainly the audience. It seems that maybe we want to separate the ethical foundations for decision-making from the mechanisms for implementing that decision-making.

We have the institutional discussion; but let's separate that out because I wonder if we had some kind of ethical foundation—the value judgments, the acceptance of or acknowledgement of local issues, and concerns and interests—as a foundation to build the mechanisms. Whether it is market forces or institutions or whatever the mechanism may be, maybe the mechanism would then work more effectively if we had an ethical foundation. That is the basic theory. So now the question is, what would those basic foundational ethics be? How do we want to educate the new generation? What do we want to teach them? What are these ethics in terms of water? What should they be?

DR. DAVID FELDMAN

First, do no harm. It is preventive, cautionary, and precautionary, and it prevents pollution. The first principle then is do no harm.

MR. RICHARD PAISLEY

Which is what sustainable development is supposed to be all about. You do not do things just for this generation. One of the great things about the First Nations People is that most of them look seven generations backwards and forwards.¹² In contrast, most politicians where I come from look to the next election, and that is the end of the story. So the idea of sustainability is, you do not do things for this generation that will compromise the ability of the future generations. That is really important.

12. "First Nations People" is a term, used to replace "Indian" in Canada, which refers to one of the original groups of inhabitants in Canada. See Indian and Northern Affairs, http://www.ainc-inac.gc.ca/pr/info/tln_e.html.

DR. GEORGE OGENDI*

Recently we did a study on children aged twelve to eighteen years in Northeast Arkansas and Njoro, Kenya. And we wanted to understand if these children really know where we are headed in terms of water use and conservation. What is it that they do to really improve on water conservation?

And what came up was very clear: the Arkansas kids are really well-informed of the water challenges facing people round the world. And all that is really lacking is taking bold action based on the available information.

For example, they would say I know that running a hot shower for several minutes is really the worst, but they still go ahead and do it. I think I should probably turn off the tap and start rationing the water, but this has not happened yet.

When I looked at the scenario in Kenya, most of the kids were saying they really do not have access to water. But the problem is if they have more, they would just use more. These kids already know what is going on, and all that we need to do is speak their language—involve them in decision-making on every aspect of water use and conservation. And that language can really help to turn their actions around, and help them to be more conscious of their actions and how those actions are going to impact water availability in the near future.

And one of the things that has been talked about all over is of course education. Our children should be part of the solution. We have to be leading examples because we talk so much in terms of example at these big conferences. But whenever we go back we do not live the lessons that we have learned and rarely

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share our knowledge on water use and conservation with our children. It has to be passed from the ones who are at these conferences, from the ones who have this information and really change can be seen in the near future. The children and adults alike need this information in order to transform ideas into actions.

DR. LARRY SWATUK

I am straddling the fence here because the ethic is there; we all know what we should do. It is all there in the book I showed you this morning: the second UN World Water Assessment Report. Don't pollute; do no harm; etcetera. We know these things. A reasonable ethic is encapsulated in the water vision of the South African Department of Water Affairs and Forestry: some water for all forever.¹³

If we know these things, then realizing some water for all forever must not be simply a function of education. So, I come back to Jim [Huffman] over here and it kind of links with what Jean [Fried] said that there are certain measures that in our world—there is no use denying the world that we live in—we have to take.

So to build an ethic, you have to build an efficacy, you have to have some kind of sanctions, incentives, or motivations that recognize the fact that education will not work here like in your cigarette example Jean [Fried].

PROFESSOR JEAN FRIED

Yes. Absolutely.

DR. LARRY SWATUK

Because with cigarettes we can prove that these things will kill you and shorten your life. But with water, as I said this morning, water is in everything and we have differential access to water. And there will never be a water war because rich people always have water.

And if you do not have water you die. So how are you going to have a war over this? In the Nile, they will negotiate, they will make a hydro power plant, and they will share energy. There will be deals. But there will still be lots of poor people up and down that river basin who will simply die and have no access.

So I am torn between on the one side my idealism, which I was once told by the head of a business school in Canada that is embarrassing in a man of my age, and pragmatism. And I am quite sympathetic to a lot of the things that Jim [Huffman] has said, not least his quoting of Machiavelli.

13. Department of Water Affairs and Forestry, Republic of South Africa, <http://www.dwaf.gov.za/>.

PROFESSOR JAMES HUFFMAN

But I might describe it as cynicism instead of pragmatism.

DR. LARRY SWATUK

Yeah. It's a vocational sickness.

PROFESSOR JAMES HUFFMAN

But I think even the principles you say—don't pollute, do no harm—those are not necessarily clear to me. We do not really mean don't pollute, or we would have to stop doing everything that we do with water because it all pollutes. We have to figure out that William Baxter case regarding pollution.¹⁴ We have to figure out what the right level of pollution is.

Do no harm. Do no harm to whom? On the Klamath everybody is saying do no harm.¹⁵ Do no harm to me! The farmers are saying do no harm to them. The fishermen are saying do no harm to the fish. So even principles that seem on their face to be straight forward and clear are not in the real world. It depends on where you are standing.

PROFESSOR JEAN FRIED

This is where we have to add one word which we did not talk about today: gift.

DR. HELEN INGRAM

Yes.

PROFESSOR JEAN FRIED

We have to pollute to live but what a gift water is. We have to put this somewhere in these principles.

MR. VERNON MASAYESVA

Yes. I have often been asked what is the Hopi religion? I asked my dad, who was a farmer all his life. But we do not make money by distributing it, we do not

14. WILLIAM FRANCIS BAXTER, JR., *PEOPLE OR PENGUINS: THE CASE FOR OPTIMAL POLLUTION* (1974).

15. Klamath Water Project is a water project in California and Oregon that plans to construct facilities to divert and distribute water for irrigation of basin lands, including reclamation of Tule and Lower Klamath Lakes, and control of floods in the area. *See* US Department of the Interior, Bureau of Reclamation, <http://www.usbr.gov/dataweb/html/klamath.html>.

sell it. But I asked my dad about the Hopi religion. And he says I do not know what it is. I just farm. And so we do not have such a thing as religion but we have a Hopi way, a Hopi ethic. And the bottom line is that our beliefs are expressed by a simple language. Like if you see a child crying, stop his crying. If you see a child hungry, you feed that child. If you see a child lonely, you comfort that child. That is what we are all about. Take care of the young, take care of each other, and that is what is important.

You peel everything away, and the core is this fundamental human responsibility. We all are morally, ethically obligated to act when we see something wrong. We have a choice to act or not to act. Both are choices. Now consider this fact from the World Water Report.¹⁶ A child dies from having no access to water or food every eight seconds. Now, we ought to all be outraged by that. That is a fact, not a story that I am making up. That is the truth. And so when you walk out keep that in your mind. Whatever profession you are in, keep that in mind.

DR. IRENE KLAVER

I think that is very beautifully said, Vernon. And I think in the ethics of attentiveness and care it is very, very basic. We need to translate that very ethic to multiple levels. We need to have a multiple scale of attentiveness and care because these issues play out differently at different institutional levels. I am sure that the child that dies has been looked at by a parent or even a stranger who wants to help but cannot.

MR. VERNON MASAYESVA

Yes.

DR. IRENE KLAVER

So we need to find ways in which institutions or economics can actually do something for that child. You need to translate that basic care to all levels, and that is still something that we have not really addressed yet.

MR. VERNON MASAYESVA

One of the ways of creating such care is through education.

16. U.N. Econ. & Soc. Council [ECOSOC], World Water Assessment Programme, *United Nations World Water Development Reports* (2003, 2006), available at <http://www.unesco.org/water/wwap/wwdr/>.

MR. VERNON MASAYESVA

And one of the languages that we all speak, we all understand, is that we understand what art is. For me that is the medium of language. We have not talked about the aesthetics of water yet.

DR. IRENE KLAVER

You are right because that will bring us to the theme of the motivational aspect. How can you harness the will to do something? How can you motivate people?

MR. VERNON MASAYESVA

But when you see that beautiful composition . . .

DR. IRENE KLAVER

And there is an element of seduction there.

MR. VERNON MASAYESVA

Yes.

DR. IRENE KLAVER

And that is just it: how can we make the ethics of water seductive?

MR. VERNON MASAYESVA

Right.

AUDIENCE MEMBER

I was taken aback by the idea of the burning river and the visualness and the action that caused.¹⁷ And someone else said that you do not see somebody die; people are just dying. Well, the other day there was a snippet image on the news about a village in Africa where the water was so polluted that the children had this worm that ends up getting in wounds and lives in their bodies and you cannot fix it. People die of this. It was such a vivid image of the pain that you get from water pollution. When you are looking for motivation, especially with wealthy people who have clean water, people need to be able to see the incredibly painful and ugly results of water pollution in this intermediary between clean water and death. It is

17. See *supra* p. 95.

a possibility, and I think that the idea of visualness makes a real difference in people's motivation.

DR. IRENE KLAVER

I think that is a good point although it is not very seductive. I think visual imagery is extremely important.

AUDIENCE MEMBER

One of the things that is important to talk about is this idea of needs. We have already talked about needs, but I am not talking about the people who are poor and who do not have access to water and need it. I am talking about the people who are rich and have a ton of access to water and money and can take an eight hour shower. Why do those wealthy people need the people who have very little access to water to have such access?

Harry [Ott] was talking earlier about going to the [Coca Cola] plant in Tanzania and when he was in the plant everybody was out with dysentery.¹⁸ So that is a real way to express this idea to these huge corporations. Coca Cola needed these employees to be healthy and working and in the plants, and these corporations need these people to be healthy. So if there is some way we can make it very clear that it is not what the have-nots don't have. It is what the haves need from the have-nots. The needs are all intertwined. Both the haves and have-nots need each other to have what they respectively need so they can live together and work together.

DR. IRENE KLAVER

Yes that is a good point. There are multiple scales of needs. All these things that we are dealing with we have to analyze on multiple scales, on a human level but also on an institutional level.

DR. GEORGE OGENDI

Larry [Swatuk] talked about wars over water.¹⁹ In Kenya, there is a Lake Naivasha, and the oil companies, the city, and the local population in the neighborhoods surrounding the lake all use the water as a resource.

Here is what has happened over the years with the explosion of the tourism industry that is taking care of the needs of the tourists. And by "tourists" I

18. *See supra* presentation of Harry Ott p. 25.

19. *See supra* p. 102.

basically mean not the local population. The tourist hotels have access to the water from the lake. It is a freshwater lake. But the locals do not have access to the water, including the farmers who happen to be along the rivers that drain the lake.

And I think it was in 2001 there was a conflict between the local people and the hotel industry, and forty people ended up dying. The local pastoralist community was killing people because they were being denied access to water. That is a straight case of water resource conflict.

The Kenyan government had to take action and address the pressing water needs of the poor. Additionally, stakeholders gathered and discussed the water issue and came up with some short-term solutions. They formed the Lake Naivasha Riparian Association, and we now are distributing water to the locals and the farmers that live in the area.²⁰ They have slowly started talking over the issues that are facing the lake and the issues of water resource allocation and finding long-term solutions.

It is creating equality. It is creating some kind of positive image to have a forum where private industry and the public, including the conflicting water resource interest groups, can come together and work on the best way possible of meeting each other's needs. Ethics is going to be an issue that they will have to address. Now they really understand why people were killing each other over water. It is a kind of social movement that has propelled their issue to the top so that the relevant authorities can act.

DR. LARRY SWATUK

Just a brief aside to it, George [Ogendi]. To me, this is not a water war. Rather, it is what a sociologist would call anomic violence where disempowered people kill or fight with each other because they do not have anything, and the people who own the lion's share of the water, fly to London and wait until it all calms down. So that is not a water war. That is poor killing poor and nobody really paying any attention, except the media who would like to make it a water war.

Returning to the discussion about motivators. I think it is issue specific. The difference with the Cleveland case is that the problem was there. That is where the problem was and you live with the consequences of your poor use of that resource there. You are motivated because if you do not do something, you suffer.

Where there is schistosomiasis or ringworm in the water, that is something that can be a motivator. But by and large we do not live with the consequences of our

20. Information about the Lake Naivasha Riparian Association is available at <http://web.ncf.ca/es202/naivasha/>.

habits of resource consumption. When I fill my gas tank, I do not feel the pain of Ogoni people in the Niger Delta. When I use a cell phone, I do not think about the suffering of miners in the Congo who make it possible for this phone to exist. Not suffering the consequences of resource exploitation acts as a disincentive to change my consumption habits. That is why one size does not fit all. The salmon worked for the Rhine because its absence was something that everyone along the Rhine could relate to. It had powerful symbolic value, but it was a symbol tied to real consequences felt by all riparians.

DR. GEORGE OGENDI

Sure.

DR. IRENE KLAVER

There is a very interesting twist to the story because actually this river [the Niger Delta] caught fire and there was only a small article somewhere in a newspaper, and that caught the attention of some environmental movement, and suddenly it exploded. So the motivation was not of the local people that were actually initially experiencing it. The traction was the fact that it exploded in the media, and that only could happen because we are talking about the 1970s. There was already a mentality there that was ready to be ignited.

PROFESSOR GABRIEL ECKSTEIN

Was that fire because of pollution?

DR. IRENE KLAVER

It was pollution. But the point is there needs to be a societal mentality for that kind of spark to ignite. So the argument of the need for local motivation, that was not sufficient to make it into the huge thing that it became. How do you get that mentality there? That is a very, very important question.

AUDIENCE MEMBER

There is one aspect of this discussion that really perplexes me. Two days ago the Bureau of Reclamation came out with a report that said that there is a 50/50 chance that Hoover Dam will run dry in the next ten years. And in the last few months we have seen Mississippi, Georgia, and Florida really battle over water.

Another report came out that just recently indicated in twenty or thirty years the glaciers in the Andes are going to make agriculture in the upper regions of the Andes virtually impossible.

So when I think about water rights, what occurs to me is that that almost only makes sense if you presume that even now there are actually enough water resources to go around.

When we talk about teaching kids to have a water ethic, the real issue is how are they going to divvy up the pie because the pie is not big enough for all of them, not any longer, at least not for the foreseeable future.

The issue of water ethics really runs up against a real temporal constraint. The freshwater resources on this planet are no longer adequate to sustain what we are currently doing. So somebody is going to change either forcibly or voluntarily, but there is going to be change because the circumstances and the rules of the game have changed.

And so how you define what constitutes an appropriate water ethic within the context is, in my explanation, a real conundrum. Otherwise you are going to end up with a postmortem discussion.

DR. IRENE KLAVER

I think you are right. It might be too time-consuming to wait until the next generation comes around to provide water ethics. We need something sooner. Your points are very well taken, but it also trickles down into a much broader societal awareness, that water scarcity issue.

What got a lot of traction was what was in the news last week that said a large portion of the New York City municipal water supply has this pharmaceutical waste in it.²¹ That is what got people's attention because that affects me, you, your children. I think examples like this will expose the need for ethics sooner than education will.

21. Jeff Donn et al., *AP Probe Finds Drugs in Drinking Water*, ASSOCIATED PRESS, Mar. 9, 2008, <http://ap.google.com/article/ALeqM5hGsoyElv4ZL879LW6z2aZS0Pix7AD8VA14500>.

AUDIENCE MEMBER

All of this is really a matter of preparation. What we are talking about here is preparing for what we can foresee. It is all about putting in the right infrastructure now, and it is a really slow process.

I tend to disagree with an earlier comment. I think we do have enough resources if we use them correctly and start now. I like to view it that way: we can act now to change irrigation practices and our consumption practices.

I look at it a lot like oil, which is a finite resource, and we know that it is bad to burn fossil fuels so we are trying our best hopefully to stop that in the next hundred years.

Water is everywhere. It is going to take a long time to change society's views through education. We can educate people at a young age, elementary students, for example, so that my kids or my grandkids will think it a luxury to take a ten minute shower.

It is about preparing for that day. I have traveled through China, India, Mexico, Senegal—places where there are real water issues. They would be happy to have some sort of legislative battle on their hands over water, but what is our goal and what is our duty as westerners or as citizens to help developing countries. What is our role without stepping on any toes?

MR. HARRY OTT

First of all, I agree with you. All scientific data nowadays indicates that we have plenty of freshwater for a long time. The misallocation of it and the population growth in certain areas is where the problems are. If you get better at managing agricultural use of it, because it is vastly wasted through the agriculture process as we are doing it right now, we can extend the amount of water that we have.

Now if population on the Earth continues to grow, we are going to run into some problems later on, and you know this next generation will think it is a luxury to have a ten minute shower.

It is so important not only to try to do something now, but also to educate that generation coming up because they are really going to have to deal with that. If they ask why did we not do something about that when we had the chance, what is our answer going to be?

That is why we need to institute a long-term view. One of the things we [Coca Cola] are doing in our training course is asking our people in our plants and our people in our offices to take the word "wastewater" out of their language.

It is renewable and reusable; it is an infinitely renewable resource that if used properly and conserved, restocked, and reused can forestall many bad things happening in the near future and maybe even the far future.

It is going to take a lot of effort to do that not only on the ethical side but the action side.

DR. IRENE KLAVER

Well, this is a really nice conclusive statement. It brings together the need to act now with an eye on the future. That sort of brings back the nice gift from Vernon [Masayesva]. We have a lot of strength from the intertwined thread. It was a wonderful day and thank you all for your participation. It was very educational for all of us now and in the future I hope.

PROFESSOR GABRIEL ECKSTEIN

And as we said at the very beginning, this is not over. This, for many of us is the second of these conferences. We are looking to have another larger discussion and a continuing discussion about this topic because it is not going away. This is something we have to address for us and for future generations.

MR. VERNON MASAYESVA

I have another gift—this water gourd. You give this to children and it teaches a lesson. This painting on the gourd represents freshwater. There is a finite amount of water, and according to scientists, two-thirds of all the water on the earth is salt in the ocean and that leaves only one-third freshwater. And of that fresh water, two-thirds is in the form of ice glaciers which only leaves us one third of liquid water. So this red circle here says we have to work to use water within limits. If you go beyond it then the oceans will grow. The oceans are starting to roll.

I would like to give this to a person who traveled the longest distance to be here. It has no water in it but we can send that later. In 2006, when we celebrated our victory over closing down the Mojave to save on water we sent twenty-six runners, not the best Hopi runners but just ordinary people, to Mexico City. The youngest runner was twelve and the oldest was seventy-five, and they all took a quart of water in a relay to the Fourth Water Forum in Mexico City to tell them about the spiritual nature of water. So this is a replica of the gourd they were carrying.

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